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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,290	12/20/2005	Richard P. Merry	58641US004	1655

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EXAMINER	
NELSON, MICHAEL B	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
01/26/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary	Application No.	Applicant(s)	
	10/561,290	MERRY, RICHARD P.	
	Examiner	Art Unit	
	MICHAEL B. NELSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on 12/04/08 have been entered. Claims 21-40 are currently under examination on the merits. The previous 112 2nd paragraph rejections have been withdrawn. It is noted that a typographical error was made in the previous office action. The typographical error has been corrected in the current rejection below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 21-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ten Eyck (U.S. 4,999,168) in view of Rogers et al. (U.S. 5,290,522).

Regarding claim 21, Ten Eyck discloses a pollution control element (Fig. 1) with a three layer intumescent mounting sheet, (26, 22, 24) around an exhaust monolith (i.e. exposed to the atmosphere, C1, L1-10). The first layer, adjacent to the monolith, 26, is a non-intumescent,

ceramic fiber layer designed to protect the adjacent intumescent layer, 22, from the high heats generated by the monolith (C5, L1-20). The third layer, 24, is a non-intumescent reinforcing layer of inter alia, inorganic fibers, which lies between the intumescent layer, 22, and the outer mounting device, 10, and thereby provides a degree of thermal protection from the relatively lower ambient temperature (C4, L60-68 and C5, L49-65). The intumescent layer, **22**, has a thickness of 0.2 inches and density of 70 pcf (i.e. 5696.2 g/m^2, C5, L10-20). Ten Eyck does not disclose the surface density of the non-intumescent layer.

Rogers et al. discloses a non-intumescent inorganic fiber mat with beneficial cushioning and thermal protection properties for use with monolith exhaust systems (Fig. 1, C2, L35-51). The mounting mat of Rogers et al. is disclosed as solving the problem of inadequate surface density in fibrous mats through needlepunching to achieve surface densities of greater than 2000 g/m^2 (C2, L50-68 and C6, L 27-32).

The inventions of both Ten Eyck and Rogers et al. are drawn to the field of catalytic monolith mounting mats and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the three layer mat of Ten Eyck by using the inorganic fiber mat material of Rogers et al. as the non-intumescent layer material for the purposes of imparting enhanced thermal holding properties (Rogers et al. C2, L35-51).

Regarding claims 22-39, modified Ten Eyck discloses all of the limitations as set forth above. Additionally, Rogers et al. discloses that the fibrous mat has shot-free, inorganic, ceramic fibers (C1, L60-68) with needlepunching resulting in high surface density (i.e. greater than 2000 g/m^2, C2, L60-65). Ten Eyck discloses that the surface density of the intumescent layer is

greater than 2000 g/m^2 (i.e. 5696.2 g/m^2, 0.2 inches thick with a density of 70 pcf, C5, L10-20) and the overall thickness of the mat is between 3 and 30 mm (C6, L30-68).

Regarding the relative thicknesses of the intumescent and non-intumescent layers, one having ordinary skill in the art would have adjusted, through routine experimentation, the relative thicknesses of the layers in the mounting mat, in order to optimize the mounting strength, thermal conduction properties, cost of manufacturing and thermal holding properties. Given the surface density properties of the materials disclosed for use in the layers, and after optimizing the relative thicknesses, the overall density of the three layer laminate would be within the claimed range.

5. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ten Eyck (U.S. 4,999,168) in view of Rogers et al. (U.S. 5,290,522), and further in view of applicant's admission of prior art.

Regarding claim 40, modified Ten Eyck discloses all of the limitations as set forth above. Modified Ten Eyck does not disclose the particular properties of the catalytic monolith used. In applicant's specification, Page 1 L20-30, it is disclosed that monoliths with walls of 6 mils and cell densities of 400 were known to those having skill in the art at the time of the invention. It would have been obvious to one having ordinary skill in the art to have used the mounting sheet of modified Ten Eyck for all applicable exhaust mounting systems and for all monoliths in order to maximize the commercial applicability of the invention. The improved thermal holding characteristics of the mounting sheet of modified Ten Eyck would make it particularly applicable

to the thin walled and increasingly fragile monoliths described in the instant specification (Page 1, L30-Page 2, L15).

Response to Arguments

6. Applicant's arguments filed on 12/04/08 have been considered but are not persuasive.

7. The typographical error cited by the applicant has been corrected above.

8. Regarding applicant's arguments directed towards the purported lack of rationale in combining the two references, the examiner contends that there was adequate rational in combining the two references (i.e. improved cushioning and thermal protection properties, see above).

9. Regarding applicant's arguments directed towards the difference in thickness of the non-intumescent mats of the two prior art references, Ten Eyck discloses that for the reinforcing layer, "there is no criticality in the composition" and the only considerations listed are "tensile strength greater than that of the intumescent layer... and have some flexibility" (C5, L15-60). The examiner contends that such a disclosure does not prohibit the use of the non-intumescent mat of Rogers et al. The thickness parameter cited by the applicant is meant to be an example of one such possible thickness for Kraft paper or generic plastic film reinforcing layer and one having ordinary skill in the art would not assume that such a thickness would apply to the layer of Rogers et al, which is made of a more specific material having a particular improved functionality. One having ordinary skill in the art would have adjusted, through routine experimentation, the relative thicknesses of the intumescent and nonintumescent layers of the modified Ten Eyck reference (i.e. using the mat of Rogers et al.), in order to optimize the

mounting strength, thermal conduction properties, cost of manufacturing and thermal holding properties.

10. The examiner also contends that adequate rational was given in the previous office action as to motivation to use the disclosure of Rogers et al. with Ten Eyck: "Rogers et al. discloses a non-intumescent inorganic fiber mat with beneficial cushioning and thermal protection properties for use with monolith exhaust systems (Fig. 1, C2, L35-51). … The inventions of both Ten Eyck and Rogers et al. are drawn to the field of catalytic monolith mounting mats."

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MN/
01/12/09

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794